



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D205-634-041**  
**Job Sheet 171289**



Part No: D205-634-041

Job Qty: 1 ea

Part Name: Replacement Skidtube with Standard Wearplates Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/30/18

Job Tracking No:

Due Date: 2/26/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

**Note:** DWG REV H SHEETS 1,2,3,8 IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD IPP Rev. O 06.02.28 Added paperwork EC IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q 10.12.01 as per chg003 DD ver:EC IPP REV:R 12.01.23 AS PER ECN11-684 VER:EC IPP REV:S 17.12.08 REMOVE GASKET AS PER INTUITIVE INFO DD VER:FJS

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty   | Start Date | Due Date | Standard |      | Workcenter/Supplier   |           | Sign-off     |
|-------|--------------------|-------|------------|----------|----------|------|-----------------------|-----------|--------------|
|       |                    |       |            |          | Setup    | Run  | Workcenter / Supplier | Lead Time |              |
| 90    | Start up Operation | 1 Ea  |            | 2/23/18  | 0.00     | 0.00 | Start Up Skidtubes    |           | MAG          |
| 110   | CNC Bend Skidtubes | 1 pcs |            | 2/23/18  | 0.00     | 0.65 | CNC Bend Skidtube     |           | MAG JSL      |
| 120   | Skidtubes          | 1 pcs |            | 2/24/18  | 0.00     | 2.89 | Skidtubes-2           |           | MAG JSL      |
| 130   | QC                 | 1 pcs |            | 2/24/18  | 0.00     | 0.00 | QC5                   |           | J.DAS        |
| 140   | Skidtubes          | 1 pcs |            | 2/24/18  | 0.00     | 2.89 | Skidtubes-2           |           | J.DAS        |
| 150   | QC                 | 1 pcs |            | 2/24/18  | 0.00     | 0.00 | QC10                  |           | 38 DAS       |
| 160   | QC                 | 1 pcs |            | 2/24/18  | 0.00     | 0.00 | QC5                   |           | 38 DAS       |
| 170   | HandFinish         | 1 pcs |            | 2/24/18  | 0.00     | 1.31 | HandFinish2           |           | SA 18-3-23   |
| 180   | Powdercoat         | 1 pcs |            | 2/24/18  | 0.00     | 0.34 | Powdercoat1           |           | BD 18-3-23   |
| 190   | QC                 | 1 pcs |            | 2/24/18  | 0.00     | 0.00 | QC3                   |           | BEB 18-03-24 |
| 200   | HandFinish         | 1 pcs |            | 2/26/18  | 0.00     | 1.31 | HandFinish4           |           | BEB 18-04-02 |
| 210   | QC                 | 1 pcs |            | 2/26/18  | 0.00     | 0.00 | QC5                   |           | 38           |
| 215   | DC                 | 1 pcs |            | 2/26/18  | 0.00     | 0.00 | DC                    |           | 38           |
| 220   | Packaging          | 1 pcs |            | 2/26/18  | 0.00     | 0.00 | Packaging3-1          |           | 17.10.18     |
| 230   | QC21-FG            | 1 Ea  |            | 2/26/18  | 0.00     | 0.00 | QC21                  |           | 21 DAS       |

Part Op 110 - 1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe batch# in Descriptions: aft end of tube

120 - 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004

140 - 1-Weld step D2576 as per Dwg. D2580 and QSI 004 2-Grind welds on step as per Dwg D2580 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension. 4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr 6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr 7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

170 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180 - START TIME: 8:20 OVEN TEMPERATURE: 320° FINISH TIME: 9:20

200 - 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 113877 Sikaflex expire date: 1804 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 113877 Sikaflex expire date: 1804 5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 113877

210 - Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

215 - Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG006

220 - Identify and pack for shipping as per PPPD205-634-041 Location: \_\_\_\_\_ PPP Rev: \_\_\_\_\_



## Job BOM

| Part / Item    | Component Name          | Quantity      | Operation             | Container |
|----------------|-------------------------|---------------|-----------------------|-----------|
| D2580-1        | 205 Bent Tube           | 1 Ea (1 ea)   | 90-Start up Operation | 5047903   |
| D2576-3        | Step (Machining Detail) | 1 Ea (1 ea)   | 140-Skidtubes         | 5156023   |
| D4202-1        | Spacer                  | 20 Ea (20 ea) | 140-Skidtubes         | 5039216   |
| ALST7-1032-130 | Rivnut                  | 50 Ea (50 ea) | 200-HandFinish        |           |
| AN3-5A         | Bolt                    | 2 Ea (2 ea)   | 200-HandFinish        |           |
| AN3C4A         | Bolt                    | 50 Ea (50 ea) | 200-HandFinish        |           |
| D2594-1        | Plug                    | 16 Ea (16 ea) | 200-HandFinish        |           |
| D2594-3        | O-Ring                  | 16 Ea (16 ea) | 200-HandFinish        |           |
| D2855          | Cap                     | 1 Ea (1 ea)   | 200-HandFinish        |           |
| D3564-11       | Wearplate Aft           | 1 Ea (1 ea)   | 200-HandFinish        |           |
| D3564-13       | Wearpad Fwd             | 1 Ea (1 ea)   | 200-HandFinish        |           |
| D3564-5        | Wearplate Center        | 1 Ea (1 ea)   | 200-HandFinish        |           |
| D3564-9        | Wearplate Fwd           | 1 Ea (1 ea)   | 200-HandFinish        |           |
| NAS1149C0332R  | Washer                  | 50 Ea (50 ea) | 200-HandFinish        |           |
| NAS1149D0332J  | Washer                  | 2 Ea (2 ea)   | 200-HandFinish        |           |

## Job Allocations

| Operation             | Component Part         | Required | Inventory | Allocated |
|-----------------------|------------------------|----------|-----------|-----------|
| 90-Start up Operation | D2580-1                | 1        | 5         | 0         |
| 140-Skidtubes         | D2576-3                | 1        | 45        | 0         |
|                       | D4202-1                | 20       | 959       | 0         |
| 200-HandFinish        | ALST7-1032-130 5008959 | 50       | 0         | 0         |
|                       | AN3-5A 5041106         | 2        | 263       | 0         |
|                       | AN3C4A 5041117         | 50       | 1,944     | 0         |
|                       | D2594-1 5045769        | 16       | 428       | 0         |
|                       | D2594-3 5035836        | 16       | 581       | 0         |
|                       | D2855 5157613          | 1        | 74        | 0         |
|                       | D3564-11 5045475       | 1        | 22        | 0         |
|                       | D3564-13 5040874       | 1        | 16        | 0         |
|                       | D3564-5 5023426        | 1        | 32        | 0         |
|                       | D3564-9 5045452        | 1        | 25        | 0         |
|                       | NAS1149C0332R 5044236  | 50       | 2,621     | 0         |
|                       | NAS1149D0332J 5020606  | 2        | 4,012     | 0         |

## Part Specifications

Specifications could not be found.

.Gagnon.Michelle

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Container No: S049585

Part: D205-634-041

Job No: 171289

Serial No/Batch: S049585

Revision: H

Inspector:

Date: 03/09/18

002142

| ITEM | QTY<br>-041 | QTY<br>-045 | QTY<br>-047 | QTY<br>-049 | PART NUMBER                                                               | DESCRIPTION        |
|------|-------------|-------------|-------------|-------------|---------------------------------------------------------------------------|--------------------|
| 1    | X           |             |             |             | D2580-041                                                                 | SKIDTUBE ASSEMBLY  |
| 2    |             | X           |             |             | D2580-045                                                                 | SKIDTUBE ASSEMBLY  |
| 3    |             |             | X           |             | D2580-047                                                                 | SKIDTUBE ASSEMBLY  |
| 4    |             |             |             | X           | D2580-049                                                                 | SKIDTUBE ASSEMBLY  |
| 20   | 1           | 1           | 1           | 1           | D2500-1-190                                                               | EXTRUSION          |
| 21   |             |             | 16          | 16          | D2570                                                                     | BUSHING            |
| 22   | 1           | 1           | 1           | 1           | D2576-3                                                                   | STEP               |
| 23   |             | 4           |             |             | D2579                                                                     | SPACER             |
| 24   | 16          | 16          | 8           | 8           | D2694-1                                                                   | PLUG               |
| 25   | 16          | 16          | 8           | 8           | D2694-3                                                                   | O-RING             |
| 26   | 1           | 1           | 1           | 1           | D2596                                                                     | 205 WEB            |
| 27   | 1           | 1           | 1           | 1           | D2555                                                                     | AFT CAP            |
| 28   | 1           | 1           |             |             | D3584-5                                                                   | WEARSHOE           |
| 29   | 1           | 1           |             |             | D3584-9                                                                   | WEARSHOE           |
| 30   | 1           | 1           |             |             | D3584-11                                                                  | WEARSHOE           |
| 31   | 1           | 1           |             |             | D3584-13                                                                  | WEARSHOE           |
| 32   | 20          | 20          | 24          | 24          | D4202-1                                                                   | SPACER             |
| 33   |             |             | 1           |             | D4406-041                                                                 | WEARPLATE ASSEMBLY |
| 34   |             |             | 1           |             | D4406-043                                                                 | WEARPLATE ASSEMBLY |
| 35   |             |             |             | 1           | D5061-1                                                                   | FWD WEARPLATE      |
| 36   |             |             |             | 1           | D5061-3                                                                   | AFT WEARPLATE      |
| 50   | 50          | 50          |             |             | ALST-1032-130<br>or AKS7-1032-130<br>or AKS4-1032-130<br>or AELS-1032-130 | INSERT             |
| 51   | 50          | 50          |             |             | ANSC4A                                                                    | BOLT               |
| 52   | 2           | 2           | 2           | 2           | AN3-5A                                                                    | BOLT               |
| 53   |             |             | 8           | 8           | AN4-45A                                                                   | BOLT               |
| 54   | 50          | 50          |             |             | NAS1149C0332R                                                             | WASHER (AN980C10L) |
| 55   | 2           | 2           | 2           | 2           | NAS1149D0332J                                                             | WASHER (AN980J10L) |
| 56   |             |             | 8           | 8           | MS21042-4                                                                 | NUT (OR MS21042L4) |

#### GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT (-041/-047/-049) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
POWDER COAT (-045) GREEN SANDTEX (REF 4.3.5.8) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 33.7 lbs  
D2580-045 = 33.7 lbs  
D2580-047 = 45.1 lbs  
D2580-049 = 32.0 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALST-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL ANSC4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241-291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047/-049)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2555 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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WITHOUT NOTICE  
WORK ORDER

NO. 171289

FEB 08 2018

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|            |                                                                                                                                                           |     |          |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|
| H          | SHEET: PL DELETE D3586-1/-5/-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY. SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS                                | SAD | 17.06.09 |
| G          | ADDED -048, -047 WEIGHT UPDATED PER DSI 9596                                                                                                              | AJS | 14.04.09 |
| F          | INCORPORATE DEO D2580-E-1 PER PAR12-218                                                                                                                   | DC  | 13.06.20 |
| E          | ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS T02577-205 (ZN C4-1) | RF  | 11.06.21 |
| D          | CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 8124/ 8183                                                                                               | PH  | 07.04.05 |
| C          | REDRAWN, INCLUDED DEO 9094/ 9097                                                                                                                          | CP  | 96.08.28 |
| B          | AS MANUFACTURED                                                                                                                                           | DS  | 96.12.02 |
| A          | NEW ISSUE                                                                                                                                                 | DS  | 96.09.16 |
| REV.       | DESCRIPTION                                                                                                                                               | BY  | DATE     |
| DESIGN     | DS                                                                                                                                                        |     |          |
| DRAWN      | SAD                                                                                                                                                       |     |          |
| CHECKED    |                                                                                                                                                           |     |          |
| MFG. APPR. |                                                                                                                                                           |     |          |
| APPROVED   |                                                                                                                                                           |     |          |
| DE APPR.   |                                                                                                                                                           |     |          |
| DATE       | 17.06.09                                                                                                                                                  |     |          |

**DART AEROSPACE LTD**  
HAWKESBURY, ONTARIO, CANADA

DRAWING NO.

D2580

REV. H

SHEET 1 OF 9

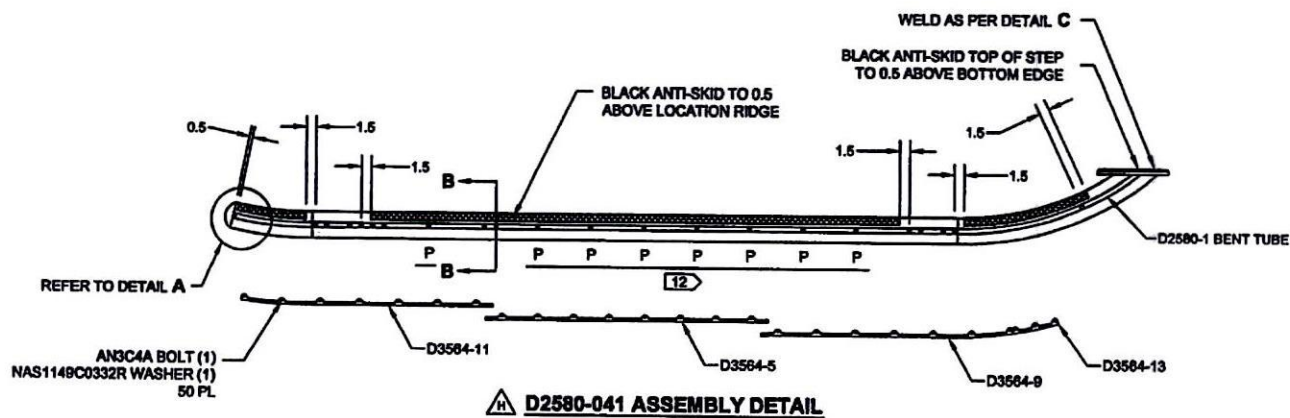
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205 SKIDTUBE ASSEMBLY

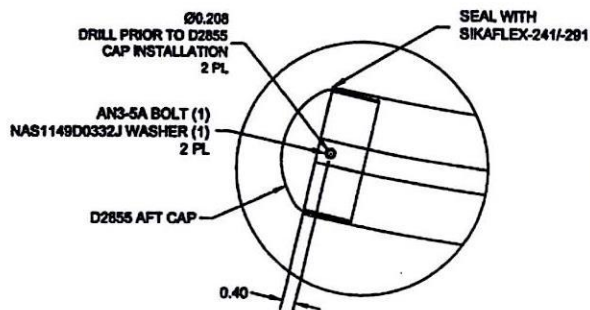
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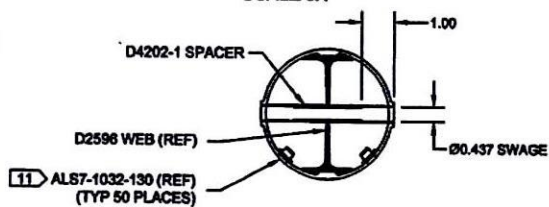
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**DETAIL A**  
SCALE 5X

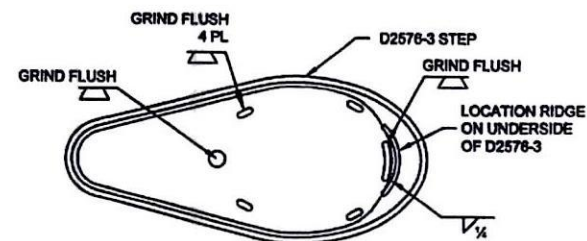


**SECTION B-B**  
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:  
1. INSERT D4202-1 SPACER (20 PLACES)  
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002  
3. TRIM / GRIND FLUSH PER QSI 002

**DETAIL C**  
SCALE 5X

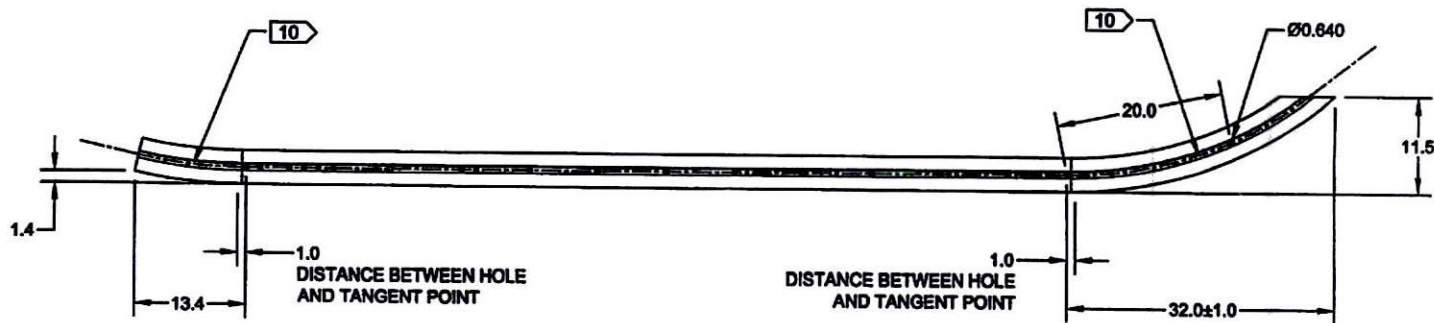


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| CHECKED    | <i>[Signature]</i> | DRAWING NO.                                                                                                                                                                                                                                                                | REV. H       |
| MFG. APPR. | <i>[Signature]</i> | D2580                                                                                                                                                                                                                                                                      | SHEET 2 OF 8 |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                                      | SCALE        |
| DE APPR.   | <i>[Signature]</i> | 205 SKIDTUBE ASSEMBLY                                                                                                                                                                                                                                                      | NTS          |
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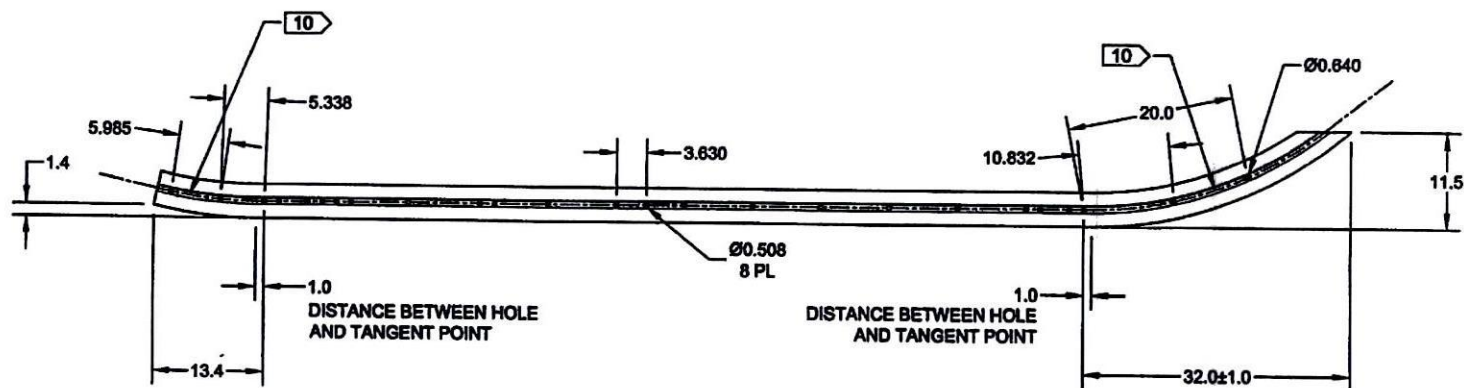




**D2580-1 BENT TUBE**  
(MAKE FROM D2580-101 TUBE)

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| MFG. APPR. | <i>[Signature]</i> | D2580                                                                                                                                                                                                                                              | SHEET 3 OF 9 |
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**D2580-7 BENT TUBE**  
(MAKE FROM D2580-101 TUBE)

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|------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
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| MFG. APPR. | <i>[Signature]</i> | D2580                                                                                                                                                                                                                                                                                   | SHEET 8 OF 9 |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                                                   | SCALE        |
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